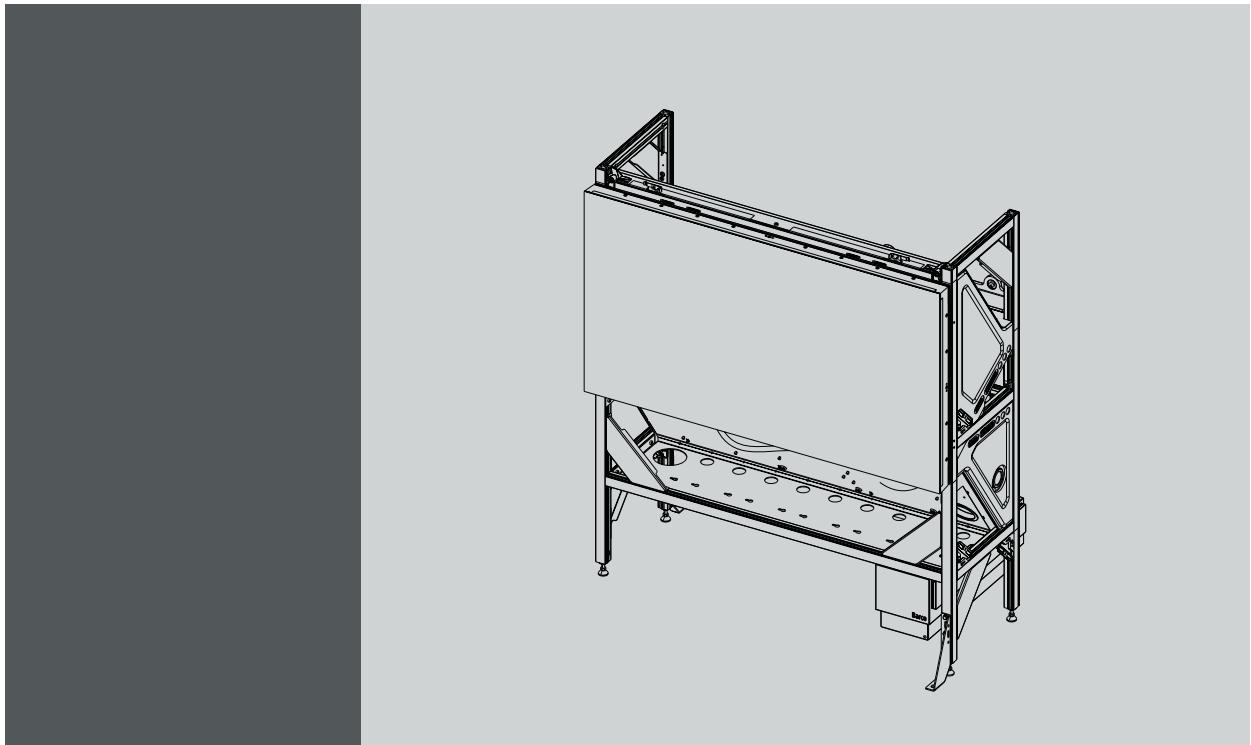


# OLS Series



## Addendum

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R9842513 - R9842514

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# 1. OLS: STEREO WALL DISPLAY

## 1.1 About this manual

### About this manual

This **Addendum** is used next to the OL Series manuals in case of OLS series. It includes all information about the stereo aspect of OLS Wall displays.

This table summarizes which information is added compared to the OL Series manuals:

Installation manual	Stereo cabling
User's manuals	<ul style="list-style-type: none"> <li>Barco Wall Control Manager interface: Stereo Configuration;</li> <li>Principle of Stereo technology in OLS Wall displays;</li> <li>Image of the Projection engine;</li> <li>Optical properties.</li> </ul>
Reference manual	Web Interface: Stereo settings.
Service manual	Additional steps in case of Projection engine replacement.

## 1.2 Principle of Stereo technology

### Description

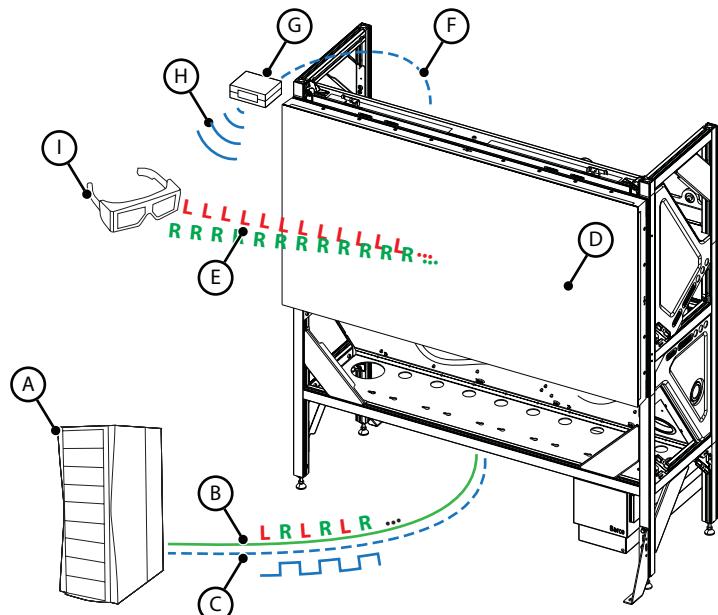


Image 1-1  
Stereo technology principle in OLS series

Label (im- age 1-1)	Description	
A	Image generator	The 3D signal is generated by an <b>image generator</b> .
B	60 Hz 3D source signal	The <b>60 Hz 3D source signal</b> as it is generated by the image generator, consists of a sequence of alternating fields (Left – Right or more general: Field A – Field B).
C	Stereo sync signal (IN)	The image generator also provides a <b>stereo sync signal</b> which is used to identify the current field as Left or Right (Field A or Field B). This signal is considered as stereo sync <b>input</b> signal for the OLS Wall display.
D	OLS Wall display	Both the source signal and the stereo sync signal are captured by the <b>OLS Wall display</b> that has an internal frame (field) doubler.

## 1. OLS: Stereo Wall display

Label (im- age 1-1)	Description
E 120 Hz projected image	This results in a projected image sequence of 120 Hz showing alternating left and right fields. In between two fields a dark interval is introduced. During this dark interval, a black image is projected to avoid cross-talk between left and right eye (also see row "I – Active Shutter glasses"). The duration (1800 $\mu$ s or 2000 $\mu$ s) and the phase of this dark interval in relation to the vertical refresh rate can be set.
F Stereo sync signal (OUT)	Example: L1–R1–L2–R2–... (60Hz) results in L1–R1–L1–R1–L2–R2–L2–R2–... (120Hz). A <b>stereo sync output signal</b> is used to field-lock the image sequence amongst all cubes of the OLS Wall display, where one cube acts as Master (3D link) and to synchronize the Active Shutter glasses with the projected image.
G Stereo emitter	The stereo emitter captures this stereo sync output signal and sends it out to the Active Shutter glasses.
H IR stereo sync signal	Stereo synchronisation signal towards the Active Shutter glasses. No objects that can block the IR stereo sync signal should be present between the stereo emitter(s) and the Active Shutter glasses.
I IR Active Shutter glasses	The <b>IR Active Shutter glasses</b> open and shut the left and right filter at the correct sequence to make each eye only see its related field (left or right). Since the switching of the Active Shutter glasses takes some time it is required to introduce some dark interval (projection of a black image) between two fields.

### 1.3 Typical use case

#### Typical use case

The OLS series are typically used in an XDS system:

- A **Desktop Generating PC** (label A) is used to generate the background image and *empty* PiP's. It runs the **XDS software** and controls the PiP's;
- The graphics card of the Desktop Generating PC is connected to the desktop input of the **WND-264 box(es)** (label C);
- The **hard-wired sources** (label B) of which the content is to be displayed in the PiPs (or full screen) are connected to the WND-264 box;
- The **OLS series** (label D) cubes are connected to the output of the WND-264 box(es);
- **Stereo emitter(s)** (label E) and **Active shutter glasses** (label F) are required to see the image in stereo.

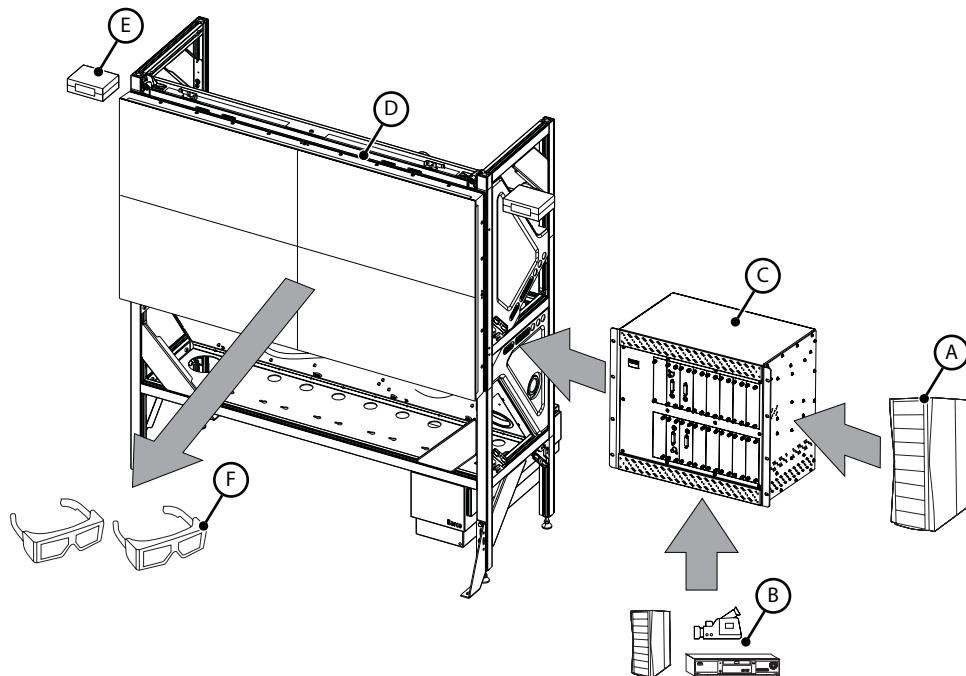


Image 1-2  
OLS series: typical use case

## 1.4 Projection engine

### Description

To include the stereo feature in the OLS series, a new formatter board has been designed. It is a bit bigger in size than the formatter board of the OL Series and it has some additional connectors:

Mini DIN 3pin (1x)	Stereo sync IN	Stereo sync signal coming from the image generator; optionally an active stereo splitter can be used to feed this signal into each cube of the OLS Wall display.
3.5 mm jack (2x)	Stereo sync OUT	<ul style="list-style-type: none"> <li>• Stereo sync output signal towards the stereo emitter(s);</li> <li>• 3D link between all cubes of an OLS Wall display: daisy chain connection.</li> </ul>

### Image

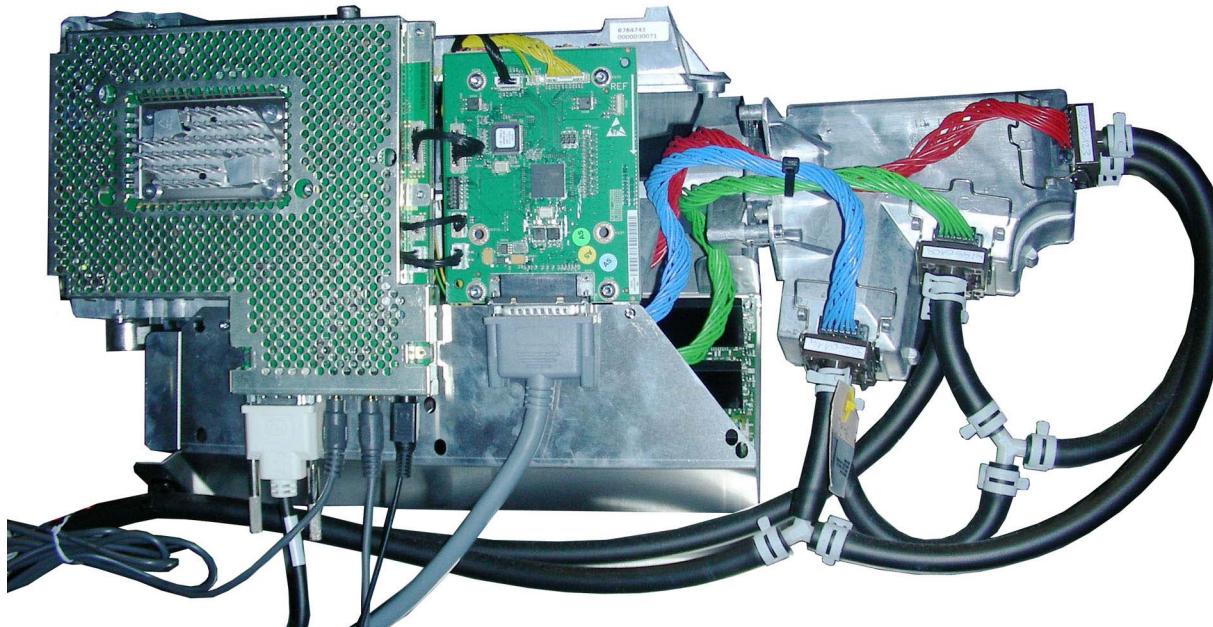


Image 1-3  
Projection engine

It can be seen on the image that the board behind the metal grid of OLS series has an extension compared to OL Series and has additional connectors.

## 1.5 BCM: stereo configuration

### Web Interface: Stereo Configuration

The Stereo Configuration section in the Barco Wall Control Manager Interface can be used for stereo configuration and operation.



You need to be logged in as administrator to see the “Stereo Configuration” section.

## 1. OLS: Stereo Wall display

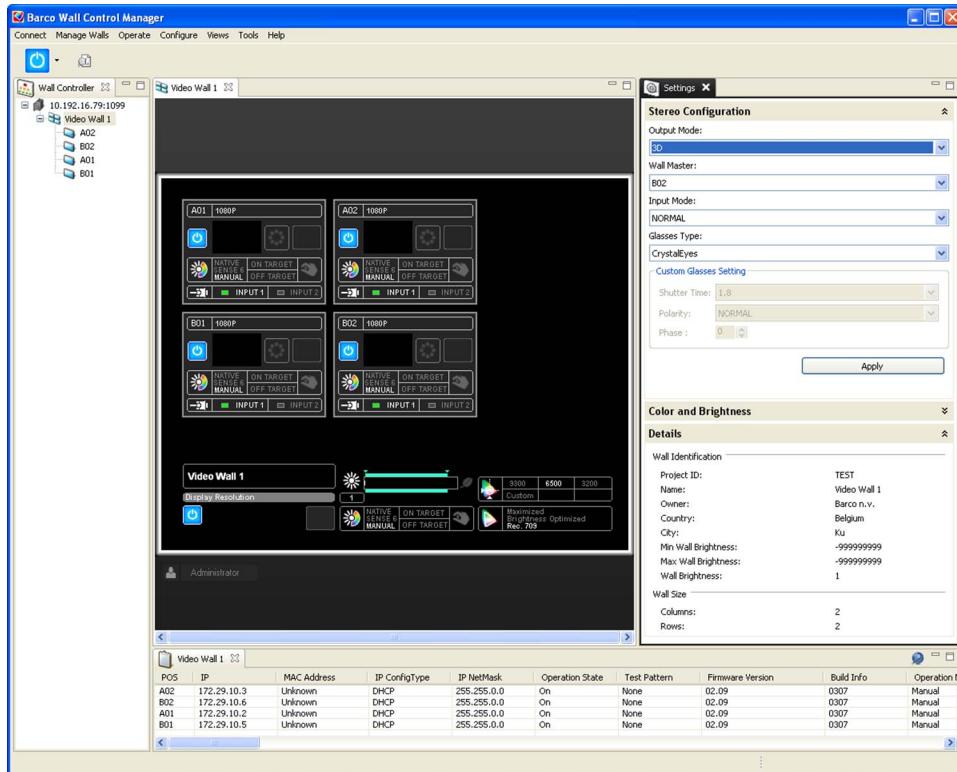


Image 1-4  
Barco Wall Control Manager



Image 1-5  
BCM: Stereo Configuration

Parameter	Description
Stereo Configuration   Output Mode	Can be one of the following: <i>2D, 3D</i> . Default: <i>2D</i> . If <i>2D</i> , the projection of all cubes of the OLS Wall display is monoscopic. If <i>3D</i> , the projection of all cubes of the OLS Wall display is stereoscopic.
Stereo Configuration   Wall Master	Can be one of the following (in case of a 2x2 OLS Wall display): <i>A01, B01, A02, B02</i> . Default: <i>A01</i> (i.e. top left cube). Defines the Master in the 3D link (i.e. stereo sync link).
Stereo Configuration   Input Mode	Can be one of the following: <i>NORMAL, SWAPPED, FIELD_A_ONLY, FIELD_B_ONLY</i> . Default: <i>NORMAL</i> . If <i>SWAPPED</i> , the stereo sync input signal is inverted, i.e. the identification of fields (Left and Right) is swapped. If <i>FIELD_A(B)_ONLY</i> , only field A (B) is displayed.
Stereo Configuration   Glass Type	Can be one of the following: <i>CrystalEyes, Nvidia, Custom</i> . Default: <i>CrystalEyes</i> . Selection must be according to the glasses used. If <i>Custom</i> , the following settings must be entered: <ul style="list-style-type: none"> <li>• <b>Shutter Time</b>: <i>1.8</i> or <i>2.0</i> ms. Default: <i>1.8</i>. Sets the dark interval during which the shutter glasses are switching.</li> <li>• <b>Polarity</b>: <i>INVERTED</i> or <i>NORMAL</i>. Default: <i>NORMAL</i>. If <i>Inverted</i>, the stereo sync output signal is inverted, i.e. the switching of the Active Shutter glasses is inverted.</li> <li>• <b>Phase</b>: range <i>0</i> → <i>255</i> (one step is <i>0.1</i> ms). Default: <i>0</i>. Delay between display of each new field and transition of stereo sync out, to compensate for emitter and glasses latency.</li> </ul> <b>Remark:</b> Shutter Time, Polarity and Phase are automatically set to the same value for all cubes of an OLS Wall display when set through Barco Wall Control Manager.



Click Apply to confirm new settings.



## 2. INSTALLATION, WEB INTERFACE AND SERVICE

### Introduction

This chapter is meant for Barco trained and qualified engineers, not operators.

### 2.1 Installation

#### Stereo connectors on OLS series

1. Make sure that all connections have been made as they should be in standard OL Series.
2. Feed the stereo sync signal from the image generator into the MiniDIN 3pin (label **C**) on all OLS cubes.

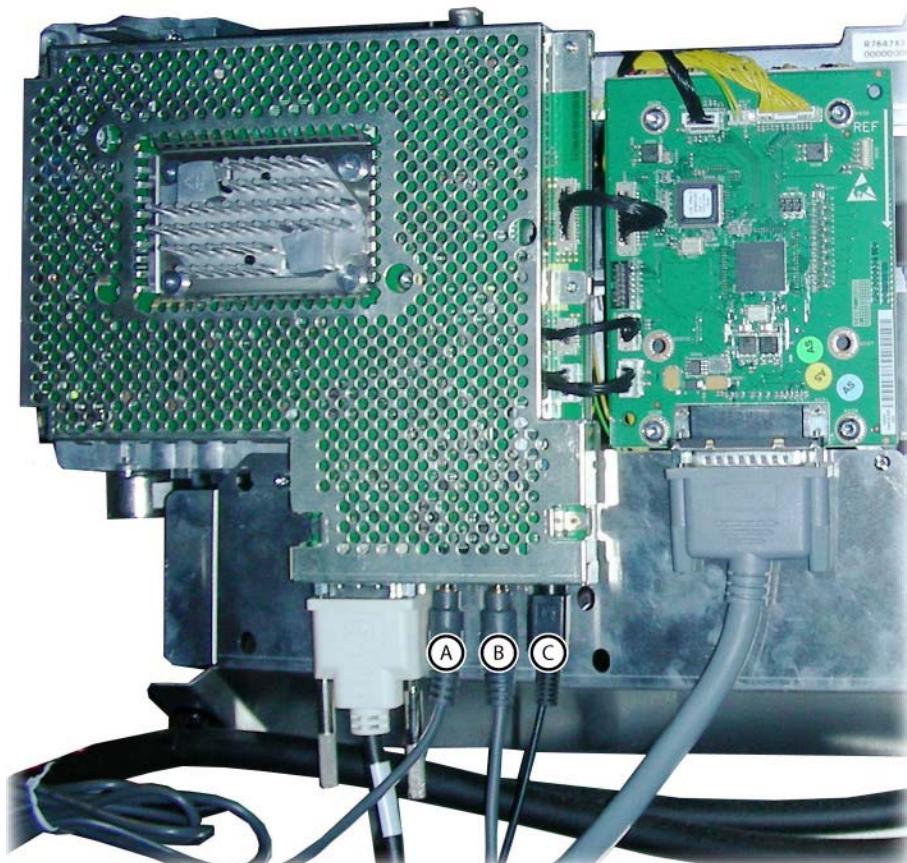


Image 2-1  
OLS stereo connectors

**Note:** It is strongly advised to use an active stereo sync splitter on OLS Wall displays having more than two cubes.

3. Connect the 3.5mm jack of all cubes (label **A** and **B**) in an OLS Series Wall display in a daisy chain configuration.
4. Connect the stereo emitter to the 3.5 mm jack (label **A** or **B**) of one of the cubes.

**Note:** In case of multiple stereo emitters, connect all emitters to one single cube, using a T-splitter (2 emitters) or an active splitter (> 2 emitters).

### Schematic diagram of stereo connection

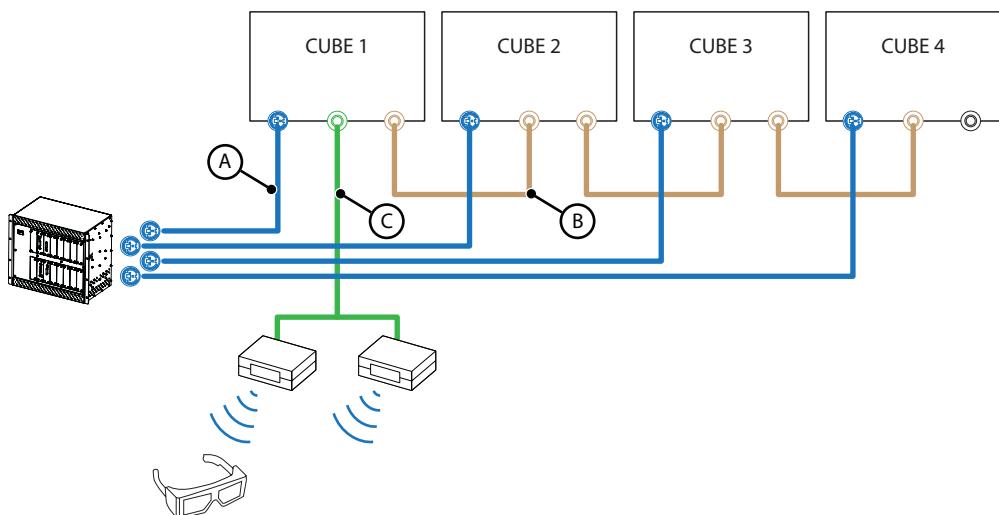


Image 2-2  
OLS stereo connection

A Stereo sync connection between Image Generator (default: WND-264) and OLS cube  
 B 3D link from one OLS cube to the other (daisy chain)  
 C Stereo sync connection between one OLS cube and stereo emitter(s)

For each of the stereo connection types (labels **A**, **B** and **C**) a dedicated set of wires is used.

### Stereo sync connection Image Generator – OLS cube

Every cube in the OLS Wall display must get its stereo sync from the image generator, which in standard setups is a WND-264.

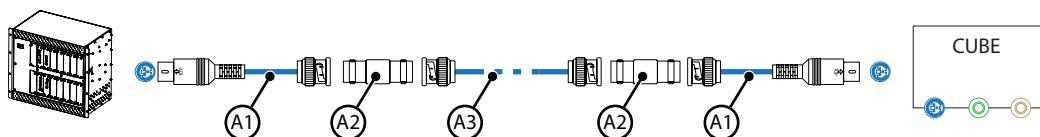


Image 2-3  
Stereo connection Image Generator - OLS cube

Label	Description	Article number
A1	Mini DIN3 M – BNC M (2.0 m)	Z3487120
A2	BNC F – BNC F	R3136677
A3	BNC M – BNC M (0.9 m)	B5582631
	BNC M – BNC M (1.8 m)	B5582632
	BNC M – BNC M (3.6 m)	B5582633
	BNC M – BNC M (7.6 m)	B5582634
	BNC M – BNC M (10.6 m)	B5582635
	BNC M – BNC M (15.2m)	B5582636
	BNC M – BNC M (22.8 m)	B5582637
	BNC M – BNC M (30,4 m)	B5582638

### 3D link from one cube to the other

All cubes in the OLS Wall display must be included in this 3D link which is a daisy chain configuration.

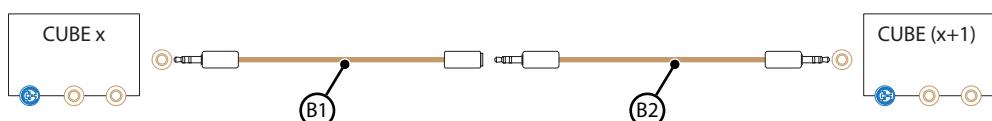


Image 2-4  
3D link between OLS cubes

Label	Description	Article number
B1	Stereo phone jack 3.5 mm M – Stereo phone jack 3.5 mm F (1.8 m)	B558346
B2	Stereo phone jack 3.5 mm M – Stereo phone jack 3.5 mm M (1.8 m)	B558345

### Stereo sync connection OLS cube – stereo emitter

In case of Stereographic, it is possible to use multiple stereo emitters. In that case, they all must be connected to one single cube. A passive T-splitter can be used in case of two stereo emitters (see example), an active stereo splitter might be required if more than two stereo emitters are used. In case of Nvidia Hub, only one Hub is required per display system.

Depending on the stereo emitter brand and type, different wires are used. The required set of wires is described for the Nvidia hub and for the StereoGraphics stereo emitter.

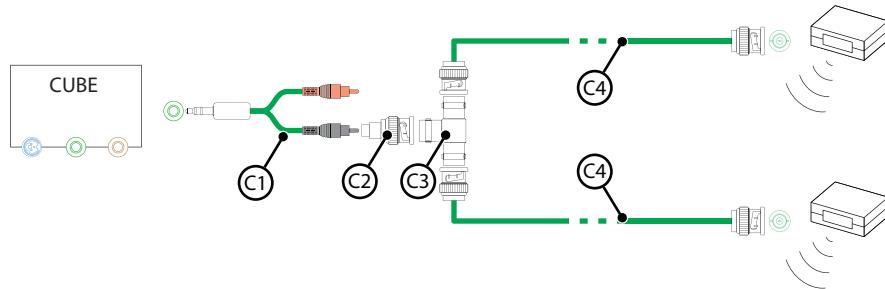


Image 2-5  
Stereo sync connection OLS cube - StereoGraphics stereo emitter

Label	Description	Article number
C1	Stereo phone jack 3.5 mm M – Dual cinch M (1.2 m)	B558043
C2	Cinch F –BNC M (adapter)	B337321
C3	BNC F – FF (passive T-splitter)	B332119
C4	BNC M – BNC M (0.9 m)	B5582631
	BNC M – BNC M (1.8 m)	B5582632
	BNC M – BNC M (3.6 m)	B5582633
	BNC M – BNC M (7.6 m)	B5582634
	BNC M – BNC M (10.6 m)	B5582635
	BNC M – BNC M (15.2m)	B5582636
	BNC M – BNC M (22.8 m)	B5582637
	BNC M – BNC M (30,4 m)	B5582638



Depending on the brand of wire, the dual cinch M connectors can be red+black or red+white. Use the black or white connector, not the red one.

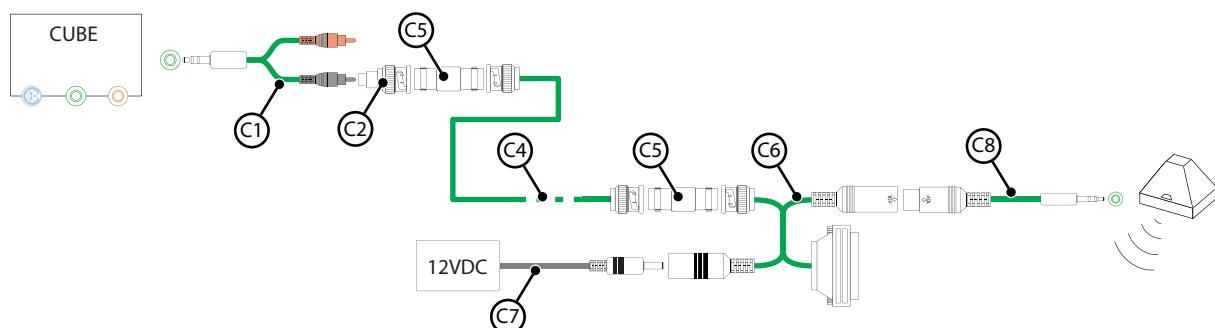


Image 2-6  
Stereo sync connection OLS cube - Nvidia hub

Label	Description	Article number
C1	Stereo phone jack 3.5 mm M – Dual cinch M (1.2 m)	B558043
C2	Cinch F –BNC M (adapter)	B337321
C3	BNC F – FF (T-adapter)	B332119

## 2. Installation, Web Interface and service

Label	Description	Article number
C4	BNC M – BNC M (0.9 m)	B5582631
	BNC M – BNC M (1.8 m)	B5582632
	BNC M – BNC M (3.6 m)	B5582633
	BNC M – BNC M (7.6 m)	B5582634
	BNC M – BNC M (10.6 m)	B5582635
	BNC M – BNC M (15.2m)	B5582636
	BNC M – BNC M (22.8 m)	B5582637
	BNC M – BNC M (30,4 m)	B5582638
C5	BNC F – F (adapter)	R3136677
C6	BNC M – Mini DIN3 M – Sub-D37 M – DC jack M (Stereo cable)	Z3403046 (part of kit R9828001)
C7	Interchangeable AC plugs – DC plug F (1.8 m) (12V power supply)	B563089 (part of kit R9828001)
C8	Mini DIN3 F – Stereo phone jack 2.5 mm M	030-0313-0003710 (delivered with the Nvidia stereo emitter)



See "Nvidia hub", page 17 for a detailed procedure on how to install the Nvidia hub.



The following AC plug types are available: Australian, U.K., European, US.

## 2.2 Web Interface

### Web Interface: Stereo Settings

The Stereo Settings page in the Web Interface can be used for diagnostics and test purposes. It is not to be used to set up an OLS series Wall display. For that Barco Wall Control Manager is available.

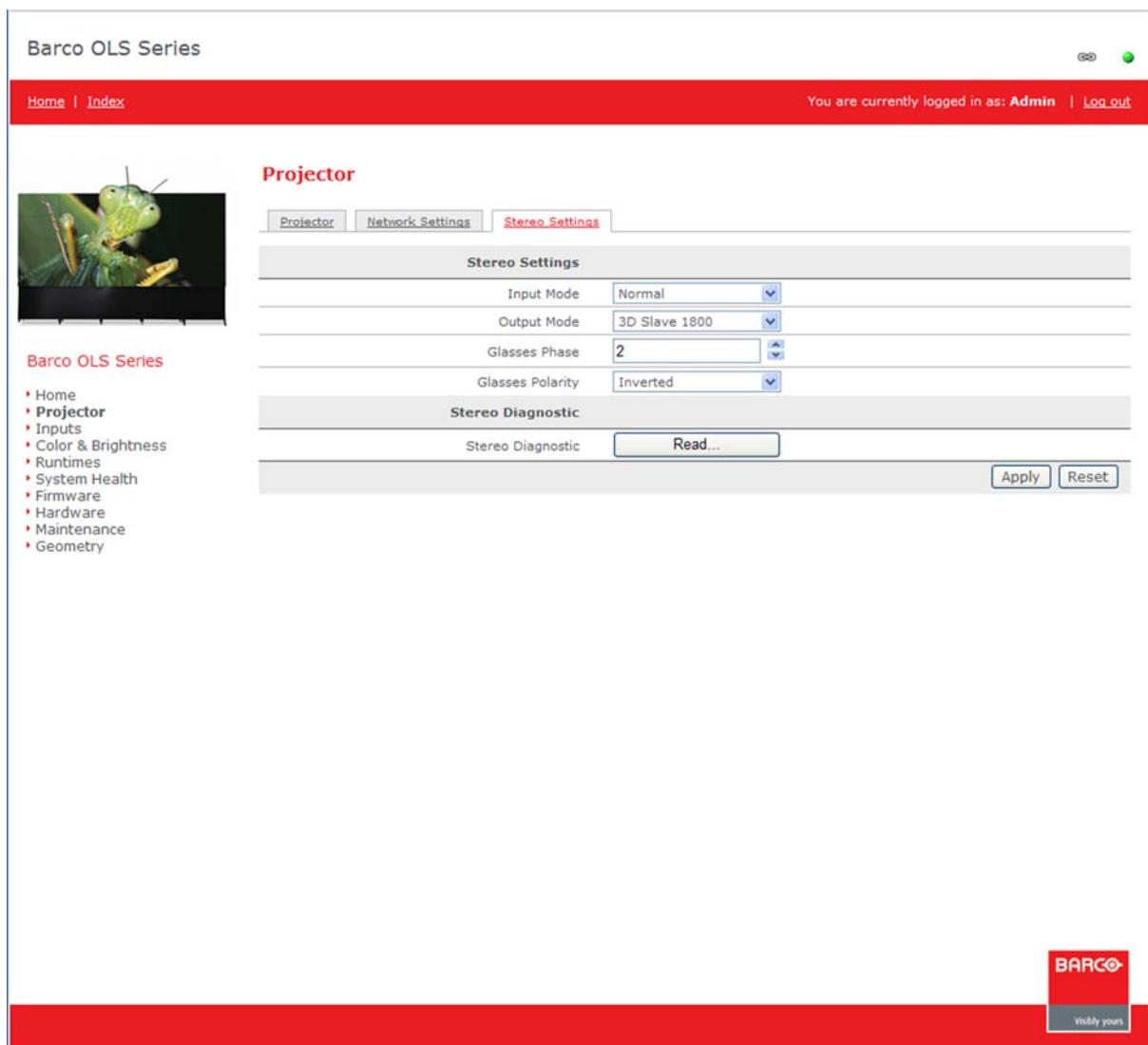


Image 2-7  
Web Interface: Stereo Settings

Parameter	Description
Stereo Settings   Input Mode	<p>Can be one of the following:  <i>Normal, Swapped, Field A Only, Field B Only.</i> Default: <i>Normal</i>.</p> <p>If <i>Swapped</i>, the stereo sync input signal is inverted, i.e. the identification of fields (Left and Right) is swapped.</p> <p>If <i>Field A (B)Only</i>, only field A (B) is displayed (at 120 Hz).</p>
Stereo Settings   Output Mode	<p>Can be one of the following:  <i>2D, 3D Master 1800, 3D Slave 1800, 3D Master 2000, 3D Slave 2000.</i> Default: <i>2D</i>.</p> <p>If <i>2D</i>, the projection is at 60 Hz: L1 – R1 – L2 – R2 ...</p> <p>If <i>3D Master 1800 (2000)</i>, the projection is at 120 Hz, dark interval is 1800 (2000) µs and the addressed cube acts as Master in the daisy chain.</p> <p>If <i>3D Slave 1800 (2000)</i>, the projection is at 120 Hz, dark interval is 1800 (2000) µs and the addressed cube acts as Slave in the daisy chain.</p> <p><b>Remark:</b> Selected dark interval must be the same for all cubes of an OLS Wall display.</p>
Stereo Settings   Glasses Phase	<p>Can be set in the range 0 to 255 where one step is 0.1 ms. Default: 0.</p> <p><b>Remark:</b> Glasses phase must be the same for all cubes of an OLS Wall display.</p>

Parameter	Description
Stereo Settings   Glasses Polarity	<p>Can be one of the following:  <i>Normal</i> and <i>Inverted</i>. Default: <i>Normal</i>.</p> <p>If <i>Inverted</i>, the stereo sync output signal is inverted, i.e. the switching of the Active Shutter glasses is inverted.</p>
Stereo Diagnostics   Read...	<p>Click the button to display the following:  <i>Diagnostic Code</i> and <i>Output Frequency</i>.</p> <p>Overview of Diagnostic Codes:</p> <ul style="list-style-type: none"> <li>• 0: 2D;</li> <li>• 1: 3D Master;</li> <li>• 2: 3D Slave locked on link input 1;</li> <li>• 3: 3D Slave locked on link input 2;</li> <li>• 4: 3D mode but no 3D input detected. Can be caused by: <ul style="list-style-type: none"> <li>- Source is 2D;</li> <li>- Stereo sync input signal (MiniDIN 3pin) not connected;</li> <li>- Stereo sync input signal (MiniDIN 3pin) from wrong source connected.</li> </ul> </li> <li>• 128: Error – there is no source available from Front End box (FEB). Can be caused by: <ul style="list-style-type: none"> <li>- FEB in standby;</li> <li>- DVI input cable of formatter: bad cable or connection;</li> </ul> </li> <li>• 129: Error – 3D Slave mode but no stereo 3D link detected. Can be caused by: <ul style="list-style-type: none"> <li>- Bad cabling of 3D link (3.5 mm jack);</li> <li>- No 3D Master is present in the link.</li> </ul> </li> </ul>



**CAUTION: These settings overwrite the settings as they have been entered in Barco Wall Control Manager.**

## 2.3 Service

### Replacement of the projection engine

While replacing the projection engine, the procedure for OL Series can be followed. The only difference is that the stereo connectors (Image 2-1) need to be unplugged before removing the projection engine and they need to be plugged in after installation of a projection engine.

## 3. TECHNICAL DATA

### 3.1 Optical properties

#### Optical properties

When stereo mode is active, the light output is considerably lower. The values listed in the table are the light output at the screen. Light loss in the Active Shutter glasses is not calculated.

Characteristic	Luminance
2D	330 Cd/m <sup>2</sup> (50") 170 Cd/m <sup>2</sup> (70")
3D 1800	260 Cd/m <sup>2</sup> (50") 135 Cd/m <sup>2</sup> (70")
3D 2000	250 Cd/m <sup>2</sup> (50") 130 Cd/m <sup>2</sup> (70")

*3. Technical data*

---

# A. NVIDIA HUB

## About this chapter

The Nvidia Hub – a stereo sync emitter to drive Nvidia Active shutter glasses – can be used if it is connected to a computer (referred to as Nvidia Hud computer in this document) having an **Nvidia Quadro graphics card** and running the **drivers for both the Nvidia Quadro graphics card and the Nvidia Hub**.

The Nvidia Hub can only be active, i.e. sending out a stereo sync to Nvidia Active shutter glasses, if a **stereo application** is present and running on the Nvidia Hub computer. As soon as the stereo application stops, the Nvidia Hud switches to standby mode. To get it back to active mode, it must be first deactivated, then activated. This can be achieved by a small script (.bat). Another way around is to have a “one-pixel stereo application” running in the background all the time.

By default the Nvidia Hub sends out a stereo sync at the same vertical refresh rate as the stereo application running at that time.

In a typical XDS driven OLS stereo display Wall, the Desktop generating computer can be used as Nvidia Hub computer if it meets the requirements as stated above. There might be one issue however: if the Desktop generating computer runs at 60 Hz while the Wall runs at 120 Hz a special **Command Line tool** is required to force the Nvidia Hub to 120 Hz instead of 60 Hz. Generally spoken: if the Display and the Nvidia Hub computer run at a different vertical refresh rates, the use of the Command Line tool is required to force the Nvidia Hub to the correct vertical refresh rate.

The procedures in this chapter describe the full installation process for the Nvidia Hub:

1. Mechanical installation and connection of the Nvidia Hub;
2. Installation of the latest Nvidia Quadra Graphics card driver;
3. Installation of the Nvidia Hub driver;
4. Configuration of the Nvidia Graphics driver through Nvidia Control Panel;
5. Use of the Command Line tool in setups where the Wall and the Nvidia Hub computer run on different vertical refresh rates.

## A.1 Mechanical installation and connection

### Description

Two wires must be connected to the Nvidia Hub:

- Mini DIN3 F – Stereo phone jack 2.5 mm M: Stereo sync signal;
- USB Type A M – USB Type Mini-A M: DATA communication and 5VDC power supply.

### Necessary parts

- Nvidia Hub (3D Vision Pro)
- Wire Mini DIN3 F – Stereo phone jack 2.5 mm M (delivered with the Nvidia Hub)
- Wire USB Type A M – USB Type Mini-A M (delivered with the Nvidia Hub)

### Installation

1. Put the Nvidia Hub in a well-considered position: the area of the viewers must be fully covered by the range of the Nvidia Hub.
2. Plug the Stereo phone jack 2.5 mm M of wire C8 in the Nvidia Hub.

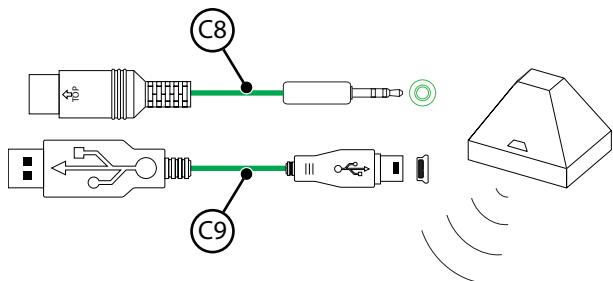


Image A-1  
Nvidia Hub: connection

C8 Mini DIN3 F – Stereo phone jack 2.5 mm M  
C9 USB Type A M– USB Type Mini-A M

3. Connect the Nvidia Hub to the Nvidia Hub computer using USB wire C9.

## A.2 Graphics driver installation

### Description

The Nvidia Hub can only be used in combination with Nvidia Quadro graphics cards. It is a good practice to get the latest driver for your graphics card prior to configuring the Nvidia Hub.

### Updating the graphics card driver

1. Check the graphics card type on your computer:

- In Windows, click *Start*;
- Right-click *My Computer*;
- Select *Manage* from the drop down menu;
- Click *Device Manager* under *System Tools*;
- Under *Display adapters* you can find the graphics card brand name and type.

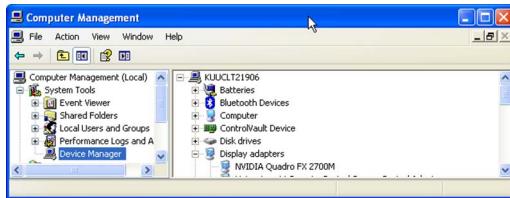


Image A-2  
Graphics card information

2. In your internet browser, browse to the *DOWNLOAD DRIVERS* page of the Nvidia website.

E.g. <http://www.nvidia.com/Download/index.aspx?lang=en-us>.

3. Download the latest driver for your Nvidia graphics card and Operating System and save it on the Nvidia Hub computer.

4. Remove the old graphics driver from the Nvidia Hub computer:

- In Windows, click *Start*;
- Click *Control Panel*;

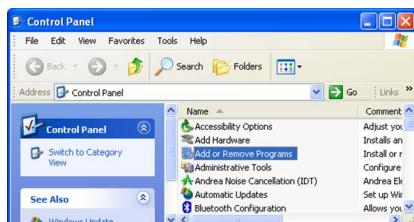


Image A-3  
Windows Control Panel

- Select *Add or Remove Programs* from the list;
- Select *NVIDIA Graphics Driver xxx.yy* from the list;

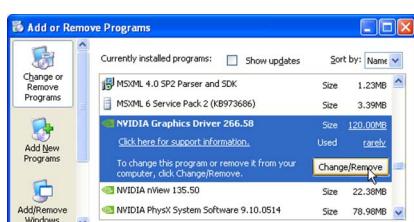


Image A-4  
Add or Remove Programs

- Click **Change/Remove**;
- Reboot the Nvidia Hub computer: it will start up in recovery resolution (800x600 pixels).

5. Install the new Nvidia graphics card drivers by double-clicking the executable you downloaded previously.

6. It might be needed to reboot the Nvidia Hub computer again.

### A.3 Nvidia Hub driver installation

#### Description

The Nvidia Hub driver is basically an USB driver and can be downloaded from Barco's intranet. As long as this driver is not installed on the computer to which the Nvidia Hub is connected, the LED on the Nvidia Hub itself blinks (purple). After installation of the USB driver, this LED switches to pale green.

It is easy to check if the driver is already installed: in Windows Device Manager you should find *NVIDIA Vision Pro Hub* in the list of Universal Serial Bus controllers.

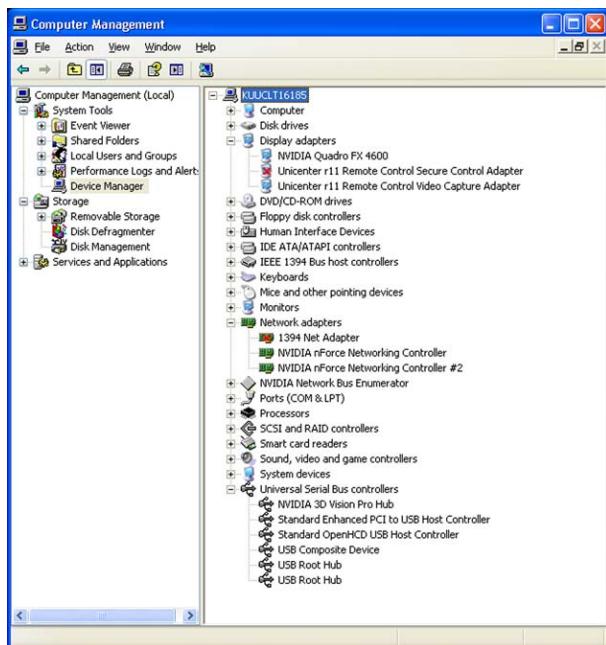


Image A-5  
Windows Device Manager

 Both the Nvidia Hub driver and the Command line tool are included in zipped folder **R33227000** that can be downloaded from TDE on Barco's intranet:

<http://kuunet.barco.com/bgs/global/TDE2/Default.asp>.

#### Necessary tools

Nvidia Hub Driver (NvIRUSB.exe)

#### Installing the Nvidia Hub driver

1. Store the Nvidia Hub driver on the Nvidia Hub computer.
2. Double-click the executable to install the USB driver.

### A.4 Graphics driver configuration



**CAUTION: Consult the NVIDIA 3D Vision Pro User Guide for more details.**

#### Connecting glasses to the Nvidia Hub

1. Right-click on your desktop image to pop up the *NVIDIA Control Panel*.
2. In the tree menu at the left side of the *NVIDIA Control Panel*, browse to *Stereoscopic 3D > Manage 3D Vision Pro* and select it.

## A. Nvidia hub

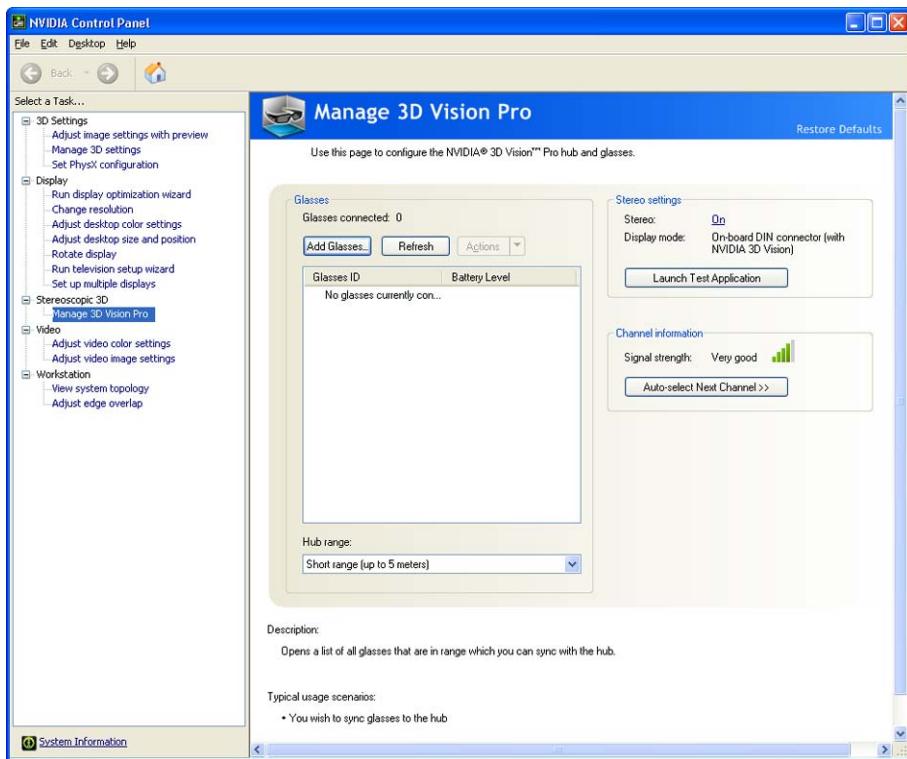


Image A-6  
NVIDIA Control Panel

3. Click **Add Glasses...**
4. Follow the instructions on the screen to connect or pair all glasses.



Image A-7  
Add Glasses: follow the instructions

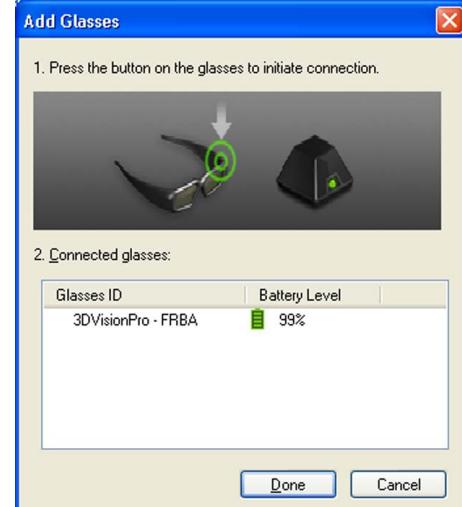


Image A-8  
Add Glasses: one pair connected

**Note:** By default the serial number of the glasses is used as Glasses ID.

5. Click **Done** if all glasses have been connected.
6. In the field **Glasses** of the *Manage 3D Vision Pro* user interface, you can now select **Actions** for further configuration.

## Configuring the 3D settings

1. Right-click on your desktop image to pop up the *NVIDIA Control Panel*.
2. In the tree menu at the left side of the *NVIDIA Control Panel*, browse to *3D Settings > Manage 3D Settings* and select it.

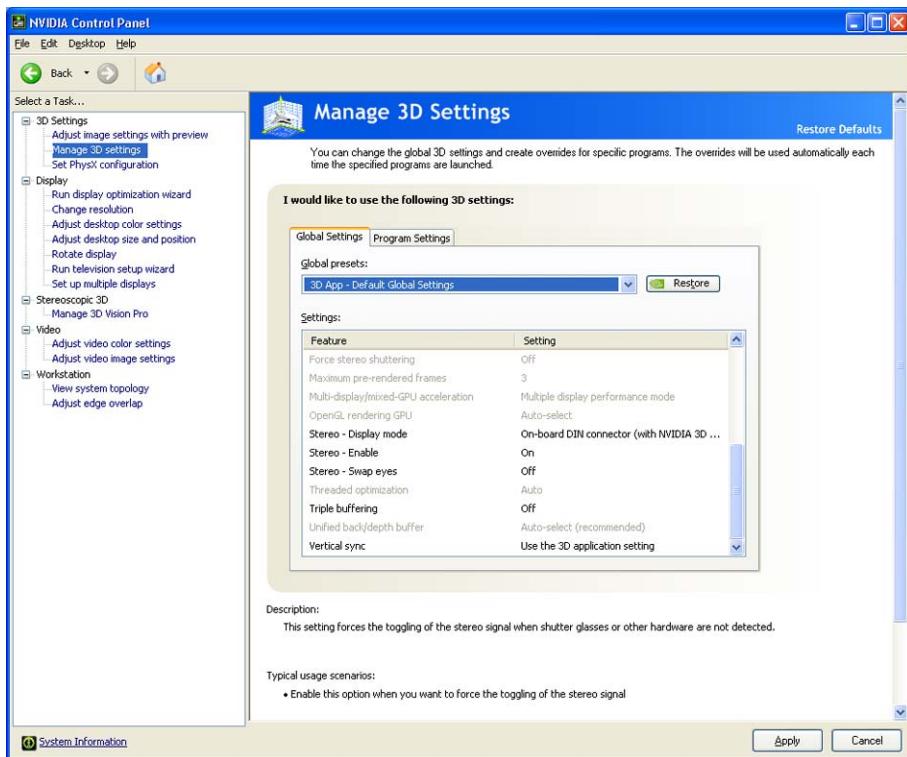


Image A-9  
Manage 3D Settings

3. In the *Global Settings* tab, select *3D App - Default Global Settings* from the drop down list.
4. In the *Settings* table, perform the following feature setting changes:
  - Set *Stereo - Enable* to **On**;
  - Set *Stereo - Display Mode* to **On-board DIN connector (with NVIDIA 3D Vision)**;
  - Set *Stereo - Swap Eyes* to **Off** (which is the advised setting to start).
5. At the bottom of the window, click **Apply** to confirm and store the new settings.

### Launch test application

1. Right-click on your desktop image to pop up the *NVIDIA Control Panel*.
2. In the tree menu at the left side of the *NVIDIA Control Panel*, browse to *Stereoscopic 3D > Manage 3D Vision Pro* and select it.

## A. Nvidia hub

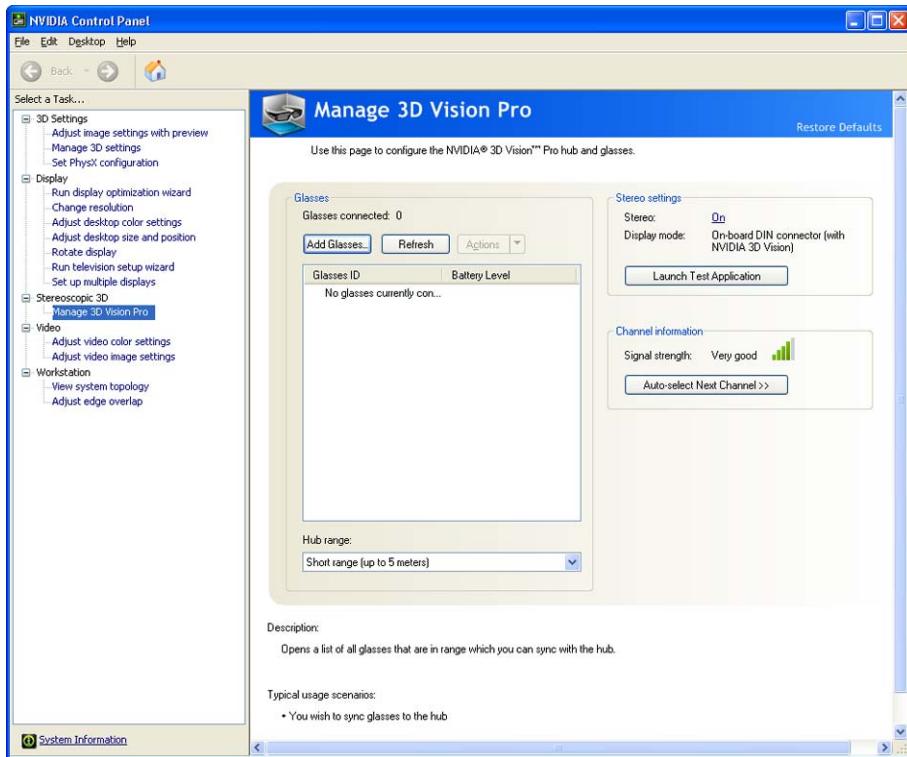


Image A-10  
NVIDIA Control Panel

3. Click **Launch Test Application** to start the Nvidia test application and put on the Stereo glasses.

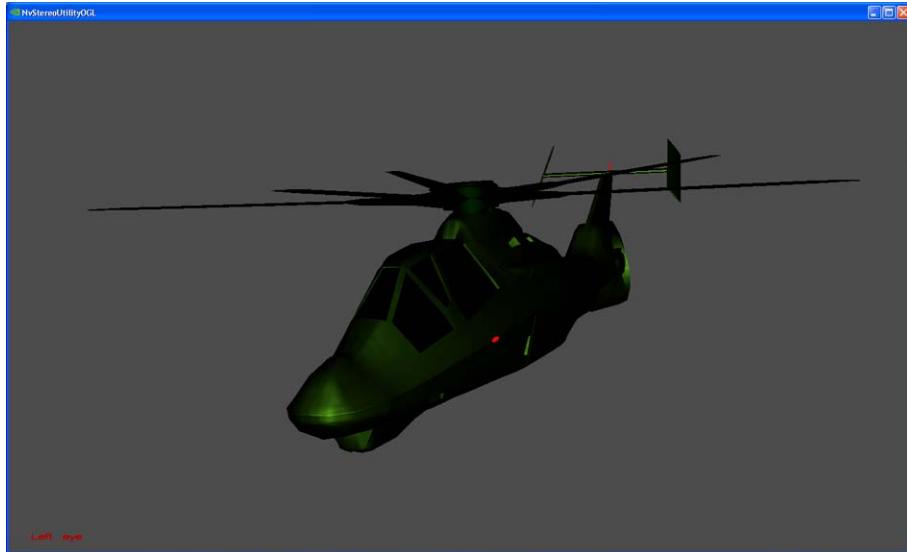


Image A-11  
3D test application

**Note:** At this stage it might be required to change 3D setting "Swap Eyes" to **On** if you don't have a depth perception while looking at the projected image of the Test Application.

## A.5 Command Line Tool

### Description

In standard setups, the vertical refresh rate running on the Nvidia Hub computer is probably the same as the vertical refresh rate of the projected image and the procedures above result in proper stereoscopic view.

If the Desktop generating computer in a typical XDS driven OLS stereo display Wall however runs at a vertical refresh rate that is different from the Wall's vertical refresh rate (e.g. 60 Hz versus 120 Hz), a special **Command Line tool** is required to force the Nvidia Hub to the same vertical refresh rate as the display Wall. In our example, the Nvidia Hud should be forced to 120 Hz rather than running at 60 Hz.



Both the Nvidia Hub driver and the Command line tool are included in zipped folder R33227000 that can be downloaded from TDE on Barco's intranet:

<http://kuunet.barco.com/bgs/global/TDE2/Default.asp>.

## Necessary tools

Nvidia Hub Command Line Tool (nv3dvp.275.89.nv.exe)

### Forcing the Nvidia Hub to a different vertical refresh rate

1. Store the Command Line Tool on a dedicated path. As an example we have chosen the following path: C:\3DVisionPro\.
2. In Windows, browse to *Start > Run* and in the edit box, enter <cmd>.
3. Click **OK** to open Window's Command line window.
4. Change to the directory where the Command Line Tool is stored:
  - Use command <CD ..> to switch to the parent directory;
  - Use command <CD path> to switch to the indicated path.
5. Deactivate the Nvidia Hub, by using the command <nv3dvp deactivateproxy>.

```
C:\WINDOWS\system32\cmd.exe
C:\3DVisionPro>nv3dvp deactivateproxy
```

Image A-12  
Nvidia Hub: deactivating

```
C:\WINDOWS\system32\cmd.exe
C:\3DVisionPro>nv3dvp deactivateproxy
nv3dvp v0.7 *** built for v275.89-compatible display/USB drivers
Hub deactivated.

C:\3DVisionPro>
```

Image A-13  
Nvidia Hub: deactivated

**Note:** In this example, "nv3dvp" is the name of the Command Line Tool as we saved it on the dedicated path in step 1.

6. Activate the Nvidia Hub and force it to 120Hz by using the command <nv3dvp activateproxy 120>

```
C:\WINDOWS\system32\cmd.exe
C:\3DVisionPro>nv3dvp deactivateproxy
nv3dvp v0.7 *** built for v275.89-compatible display/USB drivers
Hub deactivated.

C:\3DVisionPro>nv3dvp activateproxy 120
nv3dvp v0.7 *** built for v275.89-compatible display/USB drivers
UESA cable detected.
Activated hub to forward 120.0Hz stereo signal.
UESA syncs detected.

C:\3DVisionPro>
```

Image A-14  
Nvidia Hub: forced to 120Hz

**Note:** It can be forced to another vertical refresh rate as well; just change the value 120 to the desired value.

## A. Nvidia hub

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If you want an overview of the commands that can be used on the Command Line Tool, enter the command `<nv3dvp help>` from the right directory.

```
C:\WINDOWS\system32\cmd.exe
C:\3DvisionPro>nv3dvp help
nv3dvp v0.7 *** built for v275.89-compatible display/USB drivers
Use "nv3dvp help <command>", where <command> is one of:
generic commands
  help ..... prints command-specific help
  diagnose ..... shows diagnostic info
hub control
  showhub ..... shows hub info
  gethubrange ..... gets hub RF range
  sethubrange ..... sets hub RF range
  probehub ..... probes hub sync state
glasses control
  showglasses ..... shows paired glasses
  pairglasses ..... pairs a single pair of glasses
  unpairglasses ..... unpairs a single pair of glasses
  unpairallglasses ..... unpairs all glasses
  runpairingbeacon ..... runs beacon-based pairing
  setglassesname ..... sets glasses name
  clearglassesname ..... clears glasses name
proxy control
  activateproxy ..... activates sync proxy
  deactivateproxy ... deactivates sync proxy
C:\3DvisionPro>_
```

Image A-15  
Nvidia Hub: Help

---



If you want more information about the syntax of data that can be added to a command, enter the command without the correct data and press ENTER.

```
C:\WINDOWS\system32\cmd.exe
C:\3DvisionPro>nv3dvp activateproxy
nv3dvp v0.7 *** built for v275.89-compatible display/USB drivers
Use "nv3dvp activateproxy <Hz> [-f|--force]"
  to activate the hub as a sync proxy to forward an external
  <Hz> stereo signal that is provided via a VESA cable.
  -f|--force overrides any sanity checks
C:\3DvisionPro>_
```

Image A-16  
Nvidia Hub: Command info

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